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=> d bib ab ind 1-9

L27 ANSWER 1 OF 9 CA COPYRIGHT 2003 ACS

AN 137:62272 CA

TI Process for resolution of (R)-1,2-propanediol by microbial fermentation

IN Suzuki, Toshio; Idogaki, Hideaki; Nakagawa, Atsushi; Ueda, Miki

PA Daiso Co., Ltd., Japan

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1219715	A1	20020703	EP 2001-130920	20011227
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002253295	A2	20020910	JP 2001-387660	20011220
	US 2002132314	A1	20020919	US 2001-22619	20011220
PRAI	JP 2000-394493	A	20001226		
AB	A process for prepn. of (R)-1,2-propanediol which comprises cultivating a microorganism belonging to genus <b>Pseudomonas</b> or genus <b>Alcaligenes</b> which has ability to assimilate (S)-1,2-propanediol as a single carbon source, in a culture medium contg. racemic 1,2-propanediol as a single carbon source and then isolating the remaining (R)-1,2-propanediol from the culture broth. Thus, (R)-1,2-propanediol was produced by aerobic fermn. of <b>Pseudomonas nitroreducens</b> DS-S-RP8 on a synthetic medium contg. racemic 1,2-propane diol as the carbon source. The fermn. was conducted at pH 6.9, 30 .degree.C, 0.2 vvm aeration and 500 rpm. The process yielded 40% of the initial 1,2-propanediol offered with an enantiomeric excess of 99% for the R-form.				
IC	ICM C12P007-18 ICS C12P041-00; C12N001-20				
CC	16-5 (Fermentation and Bioindustrial Chemistry)				
ST	microbial fermn resoln propanediol				
IT	Culture media (defined; resoln. of (R)-1,2-propanediol by microbial fermn.)				
IT	<b>Alcaligenes</b> Extraction Fermentation <b>Pseudomonas</b> <b>Pseudomonas nitroreducens</b> Resolution (separation) (resoln. of (R)-1,2-propanediol by microbial fermn.)				
IT	57-55-6, 1,2-Propanediol, processes 4254-15-3, (S)-1,2-Propanediol, processes RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process) (resoln. of (R)-1,2-propanediol by microbial fermn.)				
IT	141-78-6, Ethyl acetate, processes RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process) (resoln. of (R)-1,2-propanediol by microbial fermn.)				
IT	4254-14-2P, preparation RL: PUR (Purification or recovery); PREP (Preparation) (resoln. of (R)-1,2-propanediol by microbial fermn.)				

RE.CNT 6      THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 9 CA COPYRIGHT 2003 ACS

AN 136:68813 CA

TI Process for the preparation of optically active 1,2-diols by cultivating microorganisms

IN Suzuki, Toshio; Idogaki, Hideaki; Nakagawa, Atsushi

PA Daiso Co., Ltd., Japan

SO Eur. Pat. Appl., 7 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT-NO.	KIND	DATE	APPLICATION NO.	DATE
PI. EP 1167534	A2	20020102	EP 2001-115843	20010628
EP 1167534	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002000292	A2	20020108	JP 2000-194316	20000628
US 2002019034	A1	20020214	US 2001-892743	20010628
PRAI JP 2000-194316	A	20000628		

OS CASREACT 136:68813; MARPAT 136:68813

AB A process for the prepn. of an optically active 1,2-diol compd. of the following formula: wherein R is an alkyl group, hydroxy substituted alkyl group, or alkenyl group, which comprises reacting a corresponding racemic 1,2-diol compd. with a strain belonging to the genus **Alcaligenes** which is cultivated under aeration. Thus, **Alcaligenes** strain DS-S-1C resolved 50 g/L of racemic 1,2,4-butanetriol to the (R) isomer with a yield of 20.3 g/L and an enantiomeric selectivity > 98%.

IC ICM C12P007-18

ICS C12P007-42

ICI C12P007-18, C12R001-05; C12P007-42, C12R001-05

CC 16-5 (Fermentation and Bioindustrial Chemistry)

ST **Alcaligenes** resoln chiral diol

IT **Alcaligenes**

(aerobic microbial resoln. of optically active 1,2-diols)

IT Fermentation

(batch; aerobic microbial resoln. of optically active 1,2-diols)

IT Resolution (separation)

(kinetic, biol.; aerobic microbial resoln. of optically active 1,2-diols)

IT 57-55-6, 1,2-Propanediol, processes 96-24-2, 3-Chloro-1,2-propanediol 497-06-3, 1,2-Dihydroxy-3-butene 584-03-2, 1,2-Butanediol 3068-00-6, 1,2,4-Butanetriol 5343-92-0, 1,2-Pentanediol 6920-22-5,

1,2-Hexanediol

36842-44-1, 5-Hexene-1,2-diol

RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process) (aerobic microbial resoln. of optically active 1,2-diols)

IT 4254-14-2P, (R)-1,2-Propanediol, preparation 40348-66-1P, (R)-1,2-Butanediol 70005-88-8P, (R)-1,2,4-Butanetriol 84994-66-1P, (R)-1,2-Hexanediol 86106-09-4P 108340-61-0P, (R)-1,2-Pentanediol 133494-68-5P

RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)

(aerobic microbial resoln. of optically active 1,2-diols)

IT 1518-62-3P, 2,4-Dihydroxybutyric acid

RL: BYP (Byproduct); PREP (Preparation)

(aerobic microbial resoln. of optically active 1,2-diols)

Find

IT 1518-62-3DP, 2,4-Dihydroxybutyric acid, sodium salt  
 RL: BYP (Byproduct); RCT (Reactant); PREP (Preparation); RACT (Reactant  
 or reagent)  
 (aerobic microbial resoln. of optically active 1,2-diols)

IT 52079-23-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (aerobic microbial resoln. of optically active 1,2-diols)

L27 ANSWER 3 OF 9 CA COPYRIGHT 2003 ACS  
 AN 133:207692 CA  
 TI Lipase-mediated partial resolution of 1,2-diol and 2-alkanol derivatives:  
 towards chiral building-blocks for pheromone synthesis  
 AU Izquierdo, Isidoro; Plaza, Maria T.; Rodriguez, Miguel; Tamayo, Juan  
 CS Department of Organic Chemistry, Faculty of Pharmacy, University of  
 Granada, Granada, 18071, Spain  
 SO Tetrahedron: Asymmetry (2000), 11(8), 1749-1756  
 CODEN: TASYE3; ISSN: 0957-4166  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 AB 1,2-Propanediol, 1-chloro-2-propanol and its related 2-O-acetate were  
 partially resolved by chemo-enzymic acetylation and deacetylation, in the  
 presence of *Pseudomonas fluorescens* lipase (Amano P.; PFL), to  
 (R)-(-)-1-acetoxy-2-propanol, (R)-(+)-2-acetoxy-1-chloropropane and  
 (R)-(-)-1-chloro-2-propanol, resp. On the other hand, treatment of  
 (2RS)-2 (I; R1 = OH) with vinyl acetate in ether and Chirazyme L-2 gave  
 2-O-acetyl-1,3,4-trideoxy-5,6:7,8-di-O-isopropylidene-.beta.-D-manno-non-5-  
 ulo-5,9-pyranose I (R1 = .alpha.-OAc) (II) and  
 1,3,4-trideoxy-5,6:7,8-di-O-  
 isopropylidene-.beta.-D-gluco-non-5-ulo-5,9-pyranose I (R1 = .beta.-OH),  
 resp. II was subsequently deacylated to I (R1 = .alpha.-OH). Both  
 alcs.  
 I (R1 = .beta.-OH) and I (R1 = .alpha.-OH) were treated with Me2CO/H+  
 to  
 cause their rearrangement to (2S,5R,8R,9R,10S)-10-hydroxy-8,9-iso-Pr  
 idenedioxy-2-methyl-1,6-dioxaspiro[4.5]decane (III; R2 = .beta.-OH) and  
 its (2R)-epimer III (R2 = .alpha.-OH), which closely matched the skeleton  
 of the odor bouquet minor components of *Paravespula vulgaris* (L.).

CC 26-2 (Biomolecules and Their Synthetic Analogs)  
 Section cross-reference(s): 7, 33

ST enzymic resoln alkanol alkanediol lipase; pheromone precursor acetyl  
 trideoxy diisopropylidene mannononulopyranose synthesis

IT Alcohols, preparation  
 RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological  
 study); PREP (Preparation); RACT (Reactant or reagent)  
 (aliph.; lipase-mediated partial resoln. of 1,2-diol and 2-alkanol  
 derivs. by chemoenzymic acetylation)

IT Pheromones, animal  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (chiral building-blocks for pheromone synthesis)

IT Acetylation  
 (enzymic; lipase-mediated partial resoln. of 1,2-diol and 2-alkanol  
 derivs. by chemoenzymic acetylation)

IT Resolution (separation)  
 (enzymic; lipase-mediated partial resoln. of 1,2-diol and 2-alkanol  
 derivs. for prepn. of building-blocks for pheromone synthesis)

IT Glycols, preparation  
 RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological

study); PREP (Preparation); RACT (Reactant or reagent)  
 (lipase-mediated partial resoln. of 1,2-diol and 2-alkanol derivs. by  
 chemoenzymic acetylation)

IT 19141-39-0P 37493-16-6P 66536-77-4P 122088-46-4P 140459-97-8P  
 151484-49-0P 151592-60-8P 289650-55-1P  
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
 (Preparation)  
 (lipase-mediated partial resoln. of 1,2-diol and 2-alkanol derivs.:  
 towards chiral building-blocks for pheromone synthesis)

IT 623-60-9P 4254-15-3P, preparation 151484-47-8P 151484-59-2P  
 289650-52-8P 289650-54-0P  
 RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological  
 study); PREP (Preparation); RACT (Reactant or reagent)  
 (lipase-mediated partial resoln. of 1,2-diol and 2-alkanol derivs.:  
 towards chiral building-blocks for pheromone synthesis)

IT 9001-62-1, Lipase  
 RL: BPR (Biological process); BSU (Biological study, unclassified); CAT  
 {Catalyst use}; BIOL {Biological study}; PROC {Process}; USES {Uses}  
 (lipase-mediated partial resoln. of 1,2-diol and 2-alkanol derivs.:  
 towards chiral building-blocks for pheromone synthesis)

IT 57-55-6, 1,2-Propanediol, reactions 108-05-4, Acetic acid ethenyl  
 ester,  
 reactions 127-00-4 289725-51-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (lipase-mediated partial resoln. of 1,2-diol and 2-alkanol derivs.:  
 towards chiral building-blocks for pheromone synthesis)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 9 CA COPYRIGHT 2003 ACS

AN 132:346678 CA

TI Synthesis and properties of hydroxy-terminated poly(hydroxyalkanoate)s

AU Shah, Devang T.; Tran, Minhtien; Berger, Pierre A.; Aggarwal, Poonam;  
 Asrar, Jawed; Madden, Leigh A.; Anderson, Alistair J.

CS Monsanto Co., St. Louis, MO, 63167, USA

SO Macromolecules (2000), 33(8), 2875-2880

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB This paper describes the biosynthesis and properties of bacterial  
 poly(hydroxyalkanoate)s (PHA) with predominantly hydroxyl end groups.  
 Hydroxy termination is achieved by the addn. of low mol. wt. diols to the  
 culture. Low mol. wt. diols of various structures were easily  
 incorporated as chain ends, when used during fermn., by a variety of  
 microorganisms. Incorporation of a chiral diol does not appear to be  
 stereospecific; both (R)- and (S)-1,2-propanediols were incorporated into  
 the polymer. Moreover, both primary and secondary hydroxyl groups of  
 1,2-propanediol were found to have reacted. It was found that an

increase

in the hydroxy termination in poly(3-hydroxybutyrate) leads to an

increase

in the thermal stability, most likely by prolonging the condensation  
 reaction and delaying the degrdn. reaction.

CC 16-5 (Fermentation and Bioindustrial Chemistry)

Section cross-reference(s): 35

ST hydroxy termination polyhydroxyalkanoate fermn propanediol

IT Polyesters, preparation

RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
 (Preparation)

(hydroxycarboxylic acid-based, hydroxy-terminated; synthesis and properties of hydroxy-terminated poly(hydroxyalkanoate)s)

IT **Comamonas testosteroni**  
Fermentation  
Ralstonia eutropha  
(synthesis and properties of hydroxy-terminated poly(hydroxyalkanoate)s)

IT 29435-48-1P, Butanoic acid, 3-hydroxy-, (R)-, homopolymer 125495-90-1P, Butanoic acid, 3-hydroxy-, (3R)-, polymer with 4-hydroxybutanoic acid  
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)  
(synthesis and properties of hydroxy-terminated poly(hydroxyalkanoate)s)

IT 4254-14-2, (R)-1,2-Propanediol, biological studies  
4254-15-3, (S)-1,2-Propanediol, biological studies  
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)  
(synthesis and properties of hydroxy-terminated poly(hydroxyalkanoate)s)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 9 CA COPYRIGHT 2003 ACS

AN 126:117128 CA

TI Microbially catalyzed optical resolution of chlorohydrins

IN Kasai, Naoya; Suzuki, Toshio; Idogaki, Hideaki

PA Daiso Co., Ltd., Japan

SO Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 745681	A2	19961204	EP 1996-108451	19960528
	EP 745681	A3	19971112		
	EP 745681	B1	20010829		
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL				
	US 5776766	A	19980707	US 1996-651935	19960521
	JP 09047296	A2	19970218	JP 1996-128242	19960523
	JP 3123428	B2	20010109		
	ES 2161942	T3	20011216	ES 1996-108451	19960528
PRAI	JP 1995-130182	A	19950529		

OS MARPAT 126:117128

AB A novel method for prepg. an optically active chlorohydrin compd. and an optically active 1,2-diol compd. and/or optically active 3-hydroxy-.gamma.-butyrolactone which are useful as intermediates for prepg. medicaments, agricultural chems., physiol. active substances, and ferroelec. liq. crystals, which comprises treating a racemic chlorohydrin compd. having the formula  $C_1(R_1)CHCH(R_2)OH$  (wherein R1 is H or a lower alkyl group and R2 is a substituted or unsubstituted lower alkyl group when R1 is H or R2 is H when R1 is a lower alkyl group) with a microorganism, thereby selectively degrading only 1 optical isomer thereof

and recovering the remaining other optically active chlorohydrin and isolating the optically active 1,2-diol and/or optically active 3-hydroxy-.gamma.-butyrolactone converted by the reaction.

IC ICM C12P041-00

ICI C12P041-00, C12R001-38; C12P041-00, C12R001-07

CC 16-1 (Fermentation and Bioindustrial Chemistry)  
 ST chlorohydrin oxidn dechlorination resoln bacteria  
 IT Bacillus sphaericus  
 Citrobacter freundii  
 Enterobacter  
**Pseudomonas**  
 (microbially catalyzed optical resoln. of chlorohydrins)  
 IT 4254-15-3P, preparation 7331-52-4P 58081-05-3P 73522-17-5P  
 74923-98-1P 86728-85-0P 86728-93-0P 86728-94-1P 88496-70-2P  
 90835-97-5P 90835-98-6P 90866-33-4P 112635-76-4P 114819-45-3P  
 127913-44-4P 143780-79-4P 185033-57-2P 185033-58-3P 185033-60-7P  
 185033-63-0P 185033-69-6P 186091-55-4P  
 RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
 (Preparation)  
 (microbially catalyzed optical resoln. of chlorohydrins)  
 IT 78-89-7, 2-Chloro-1-propanol 96-24-2D, Chlorohydrin, derivs.  
 105-33-9,  
 4-Chloro-3-hydroxybutyronitrile 2203-34-1 4151-97-7 4151-98-8,  
 2-Propanol, 1-chloro-3-ethoxy- 10488-68-3, Methyl 4-chloro-3-  
 hydroxybutyrate 10488-69-4, Ethyl 4-chloro-3-hydroxybutyrate  
 26106-95-6, 2-Chloro-1-butanol 89693-37-8 100596-47-2, Propyl  
 4-chloro-3-hydroxybutyrate 185033-56-1  
 RL: BPR (Biological process); BSU (Biological study, unclassified); RCT  
 (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or  
 reagent)  
 (microbially catalyzed optical resoln. of chlorohydrins)

L27 ANSWER 6 OF 9 CA COPYRIGHT 2003 ACS

AN 123:167740 CA

TI Manufacture of optically active 1,2-diols and halogenohydrins with  
 microbial enzymes

IN Suzuki, Toshio; Kasai, Naoya; Minamiura, Yoshichika

PA Daisow Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07147993	A2	19950613	JP 1993-296419	19931126
	JP 3077478	B2	20000814		
PRAI	JP 1993-296419		19931126		

OS MARPAT 123:167740

AB Optically active R1R2CHCH2R1 [R1 = OH, halo; R2 = (un)substituted alkyl,  
 alkenyl, aryl, when R1 = OH; R2 = CH2OH when R1 = halo] (I) are manufd.

by

treatment of racemic I with dehalogenase. Racemic 1,2-butanediol was  
 treated with crude dehalogenase of **Alcaligenes**, phenazine  
 methosulfate, and 2,6-dichlorophenolindophenol in phosphate buffer at  
 30.degree. for 4 h to manuf. 40.8% (R)-1,2-butanediol (optical purity  
 97.5% ee).

IC ICM C12P041-00

ICI C12P041-00, C12R001-05

CC 16-5 (Fermentation and Bioindustrial Chemistry)

ST optically active diol manuf dehalogenase; halohydrin optically active  
 manuf dehalogenase; resoln diol halohydrin dehalogenase

IT **Alcaligenes**

(manuf. of optically active diols or halohydrins with dehalogenase of  
**Alcaligenes** from racemates (by using electron acceptors))

IT Glycols, preparation  
 RL: PUR (Purification or recovery); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (manuf. of optically active diols or halohydrins with dehalogenase of  
**Alcaligenes** from racemates (by using electron acceptors))

IT Resolution  
 (biochem., manuf. of optically active diols or halohydrins with  
 dehalogenase of **Alcaligenes** from racemates (by using electron  
 acceptors))

IT 53-59-8, NADP 53-84-9, NAD 61-73-4, Methylene blue 288-94-8D,  
 1H-Tetrazole, onium 299-11-6, Phenazine methosulfate 956-48-9, DCIP  
 (analytical reagent) 1910-42-5 2701-91-9 13408-62-3, Ferricyanide  
 ion 76905-70-9 167173-65-1  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (electron acceptor; manuf. of optically active diols or halohydrins  
 with dehalogenase of **Alcaligenes** from racemates (by using  
 electron acceptors))

IT 4254-14-2P, preparation 16355-00-3P 40348-66-1P 60827-45-4P,  
 (S)-3-Chloro-1,2-propanediol 78692-89-4P 78843-64-8P 83165-35-9P  
 84994-66-1P 86106-09-4P 87720-90-9P 108340-61-0P 133494-68-5P  
 137490-63-2P  
 RL: BMF (Bioindustrial manufacture); PUR (Purification or recovery); BIOL  
 (Biological study); PREP (Preparation)  
 (manuf. of optically active diols or halohydrins with dehalogenase of  
**Alcaligenes** from racemates (by using electron acceptors))

IT 9015-72-9, Dehalogenase  
 RL: CAT (Catalyst use); USES (Uses)  
 (manuf. of optically active diols or halohydrins with dehalogenase of  
**Alcaligenes** from racemates (by using electron acceptors))

IT 4254-16-4, 1,2-Propanediol, (.+-.)-, reactions 7138-28-5 26171-83-5  
 34637-21-3 52340-46-2 82571-11-7, 1,2-Heptanediol, (.+-.)-  
 82890-22-0 86161-40-2 87720-89-6, 1,2-Octanediol, (.+-.)-  
 87760-48-3, 1,2-Hexanediol, (.+-.)- 91049-43-3, 1,2-Pentanediol,  
 (.+-.)-  
 116499-75-3 133576-12-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manuf. of optically active diols or halohydrins with dehalogenase of  
**Alcaligenes** from racemates (by using electron acceptors))

L27 ANSWER 7 OF 9 CA COPYRIGHT 2003 ACS

AN 121:106612 CA

TI A novel generation of optically active 1,2-diols from the racemates by  
 using halohydrin dehydro-dehalogenase

AU Suzuki, Toshio; Kasai, Naoya; Minamiura, Noshi

CS Res. Lab., Daiso, Co., Ltd, Amagasaki, 660, Japan

SO Tetrahedron: Asymmetry (1994), 5(2), 239-46

CODEN: TASYE3; ISSN: 0957-4166

DT Journal

LA English

AB A novel enzyme dehalogenating halohydrins, designated as halohydrin  
 dehydro-dehalogenase (HDDase), was purified from **Alcaligenes** sp.  
 DS-S-7G. The enzyme catalyzed oxidative dehalogenation of  
 (R)-3-chloro-1,2-propanediol [monochlorohydrin (MCH)] to acetic acid and  
 formaldehyde via hydroxyacetone stereoselectively by the addn. of  
 artificial electron acceptors. The dehalogenating activity was much  
 higher in the presence of 2,6-dichlorophenolindophenol (DCIP) and  
 phenazine methosulfate (PMS). The resulting stereoselective  
 dehydro-dehalogenation was applicable to prepn. of various optically  
 active halohydrins and 1,2-diols so that the resp. residual isomers had  
 excellent enantiomeric excesses (ee) (60-99% ee).



CC 16-5 (Fermentation and Bioindustrial Chemistry)  
 ST diol enzymic resoln dehydro dehalogenase **Alcaligenes**; halohydrin  
 dehydro dehalogenase **Alcaligenes** enzymic resoln  
 IT **Alcaligenes**  
 (halohydrin dehydro-dehalogenase of, optically active diols prepn.  
 with)  
 IT Fermentation  
 (optically active diols, with halohydrin  
 dehydro-dehalogenase-producing  
**Alcaligenes**)  
 IT Glycols, biological studies  
 Halohydrins  
 RL: PREP (Preparation)  
 (optically active, halohydrin dehydro-dehalogenase of  
**Alcaligenes** for prepn. of)  
 IT Resolution  
 (enzymic, optically active diols prepn. by, with halohydrin  
 dehydro-dehalogenase of **Alcaligenes**)  
 IT 299-11-6, Phenazine methosulfate 956-48-9, 2,6-Dichlorophenolindophenol  
 RL: BIOL (Biological study)  
 (for enhancement of optically active diols prepn. with halohydrin  
 dehydro-dehalogenase of **Alcaligenes**)  
 IT 132421-41-1, Halohydrin dehydro-dehalogenase  
 RL: BIOL (Biological study)  
 (of **Alcaligenes**, for prepn. of optically active diols and  
 hydrins by enzymic resoln.)  
 IT 4254-14-2P, (R)-1,2-Propanediol, biological studies 16355-00-3P  
 40348-66-1P, (R)-1,2-Butanediol 60827-45-4P, (S)-3-Chloro-1,2-  
 propanediol 78692-89-4P 83165-35-9P 84994-66-1P, (R)-1,2-Hexanediol  
 86106-09-4P 108340-61-0P 133494-68-5P 137490-63-2P  
 RL: PREP (Preparation)  
 (prepn. of, with halohydrin dehydro-dehalogenase of **Alcaligenes**  
 by enzymic resoln.)  
 IT 57090-45-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with halohydrin dehydro-dehalogenase of  
**Alcaligenes**)

L27 ANSWER 8 OF 9 CA COPYRIGHT 2003 ACS

AN 120:242696 CA

TI Enzymic resolution of 1,2-propanediol with **Pseudomonas**

IN Nikaido, Teruyuki; Kawada, Naoki

PA Daicel Chem, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06030790	A2	19940208	JP 1992-188138	19920715
	JP 3157609	B2	20010416		
PRAI	JP 1992-188138		19920715		

AB Optical active 1,2-propanediol (I) is prepd. with **Pseudomonas** by  
 enzymic resoln. (R)-I is prepd. from racemate with P. Putida TRB-2 and

-4

and **Pseudomonas** sp. TRP-13 by degrdn. of the (S)-I. (S)-I is  
 prepd. from racemate with P. Putida TRP-7 by degrdn. of the (R)-I. The  
 physiol. and morphol. characteristics of these **Pseudomonas** were  
 given.

IC ICM C12P041-00  
 ICS C12N001-20  
 ICI C12P041-00, C12R001-38; C12P041-00, C12R001-40; C12N001-20, C12R001-38;  
 C12N001-20, C12R001-40  
 CC 16-5 (Fermentation and Bioindustrial Chemistry)  
 ST propanediol enzymic resoln **Pseudomonas**  
 IT **Pseudomonas**  
     **Pseudomonas putida**  
     (enzymic resoln. of propanediol with)  
 IT Resolution  
     (enzymic, of propanediol, with **Pseudomonas**)  
 IT 4254-16-4, DL-1,2-Propanediol, biological studies  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (enzymic resoln. of, with **Pseudomonas**)  
 IT 4254-14-2P, (R)-1,2-Propanediol, biological studies  
 4254-15-3P, (S)-1,2-Propanediol, biological studies  
 RL: PREP (Preparation)  
     (prepn. of, with **Pseudomonas** by enzymic resoln.)

L27 ANSWER 9 OF 9 CA COPYRIGHT 2003 ACS  
 AN 108:109140 CA  
 TI Electroenzymic and electromicrobial reduction: preparation of chiral  
 compounds  
 AU Thanos, Iordanis; Bader, Johann; Guenther, Helmut; Neumann, Stefan;  
 Krauss, Friedrich; Simon, Helmut  
 CS Org.-Chem. Inst., Tech. Univ. Munchen, Garching, D-8046, Fed. Rep. Ger.  
 SO Methods in Enzymology (1987), 136(Immobilized Enzymes Cells, Pt. C),  
 302-17  
 CODEN: MENZAU; ISSN: 0076-6879  
 DT Journal  
 LA English  
 AB Principles, substrate specificity and kinetic data of (2R)-  
 hydroxycarboxylate-halogen oxidoreductase (I), and factors detg. the  
 design of the electrochem. cell are discussed. Procedures for purifn. of  
 enoate reductase (II) and I are given. Enzyme assays in cuvettes,  
 immobilization of II in Ca alginate gels, repeated use of immobilized II,  
 use of whole cells of Clostridium La 1 or partially purified I, and  
 (R)-propanediol prepn. by the combination of Candida utilis and  
**Alcaligenes eutrophus**.  
 CC 9-14 (Biochemical Methods)  
 Section cross-reference(s): 7  
 ST redn electroenzyme electromicrobial; chiral compd electroenzymic  
 electromicrobial redn  
 IT Reduction  
     (electroenzymic and electromicrobial, in prepn. of chiral compds.)  
 IT Immobilization, biochemical  
     (in electroenzymic and electromicrobial redn. in prepn. of chiral  
     compds.)  
 IT 70712-51-5, Enoate reductase 70852-00-5  
 RL: ANST (Analytical study)  
     (electroenzymic redn. with, in prepn. of chiral compds.)  
 IT 4254-14-2P, preparation  
 RL: PREP (Preparation)  
     (prepn. of, by electroenzymic redn.)

=>

=> d bib ab 2 27 42

L32 ANSWER 2 OF 61 WPIDS (C) 2003 THOMSON DERWENT

AN 2002-637829 [69] WPIDS

DNC C2002-180165

TI Preparing (R)-1,2-propanediol from racemic

1,2 propanediol, for use in preparing

pharmaceuticals and agrochemicals, comprises using a microorganism which can stereoselectively assimilate the (S)-isomer as a single carbon source.

DC B05 C03 D16

IN IDOGAKI, H; NAKAGAWA, A; SUZUKI, T; UEDA, M

PA (OSAS) DAISO CO LTD; (IDOG-I) IDOGAKI H; (NAKA-I) NAKAGAWA A; (SUZU-I) SUZUKI T; (UEDA-I) UEDA M

CYC 29

PI EP 1219715 A1 20020703 (200269)\* EN 13p

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR

CA 2365805 A1 20020626 (200269) EN

US 2002132314 A1 20020919 (200269)

JP 2002253295 A 20020910 (200274) 8p

ADT EP 1219715 A1 EP 2001-130920 20011227; CA 2365805 A1 CA 2001-2365805  
20011221; US 2002132314 A1 US 2001-22619 20011220; JP 2002253295 A JP  
2001-387660 20011220

PRAI JP 2000-394493 20001226

AB EP 1219715 A UPAB: 20021026

NOVELTY - Preparing (R)-1,2-propanediol can  
be prepared from racemic 1,2-propanediol

comprises using a microorganism which can stereoselectively assimilate  
the (S)-isomer as a single carbon source.

DETAILED DESCRIPTION - Preparing of (R)-1,2-

propanediol comprises cultivating a microorganism belonging to the  
genus *Pseudomonas* or *Alcaligenes* which has the ability  
to assimilate (S)-1,2-propanediol as a  
single carbon source, and to grow in a culture medium containing a

racemic

1,2-propanediol as a single carbon source,

stereoselectively assimilating (S)-1,2propanediol, and then isolating

(R)-

1,2-propanediol from the culture broth.

An INDEPENDENT CLAIM is also included for *Pseudomonas*  
*nitroreducens* DS S-RP8 (Deposit No.: FERM BP-7793).

USE - The method is used to prepare (R)-1,2-  
propanediol (claimed), which is useful as an intermediate in the  
preparation of optically active compounds, e.g. pharmaceuticals and  
agrochemicals.

ADVANTAGE - The method is more economical and simpler than previous  
methods.

Dwg.0/0

L32 ANSWER 27 OF 61 WPIDS (C) 2003 THOMSON DERWENT

AN 1994-079306 [10] WPIDS

DNC C1994-035959

TI Prodn. of optically active 1,2-propane- diol - by treating enantiomer  
mixt. of 1,2-propane-diol with microorganisms or their processed prod  
capable of converting enantiomer mixt. to (R)-1,2-propane-diol.

DC B05 C03 D16 E17 L03

PA (DAIL) DAICEL CHEM IND LTD

CYC 1  
PI JP 06030790 A 19940208 (199410)\* 11p  
JP ~~3157609~~ B2 20010416 (200124) 11p  
ADT JP 06030790 A JP 1992-188138 19920715; JP 3157609 B2 JP 1992-188138 19920715  
FDT JP 3157609 B2 Previous Publ. JP 06030790  
PRAI JP 1992-188138 19920715  
AB JP 06030790 A UPAB: 19940421  
Prodn. of (R)-1,2-**propanediol** comprises (a) treating an enantiomer mixt of 1,2-**propanediol** with a microorganism or its processed prod capable of converting an enantiomer mixt of 1,2-**propanediol** into (R)-1,2-**propanediol** and (b) recovering the remaining (R)-1,2-**propanediol**.

Also are new: prodn. of (S)-1,2-**propanediol** which comprises (a) treating an enantiomer mixt of 1,2-**propanediol** with a microorganism of **Pseudomonas** or its processed prod capable of converting an enantiomer mixt of 1,2-**propanediol** into (S)-1,2-**propanediol** and (b) recovering the remaining (S)-1,2-**propanediol**; and a novel microorganism of **pseudomonas** capable of metabolising and decomposing one of enantiomer of 1,2-**propanediol** stereospecifically.

USE/ADVANTAGE - The 1,2-**propanediol** is useful as a starting material for liq crystals, pharmaceuticals or agrochemicals. The process provides optically active 1,2-**propanediol** in high optical purity.  
Dwg.O/O

L32 ANSWER 42 OF 61 WPIDS (C) 2003 THOMSON DERWENT  
AN 1989-159087 [22] WPIDS  
DNC C1989-070596  
TI Prodn. of S-1,2-diol cpds. from R-1,2-diol or racemate - using microorganism capable of inverting or selectively metabolising the R-1,2-diol.  
DC B05 C03 D16  
IN HASEGAWA, J; OGURA, M; SHIRASHI, T; TAKHASHI, H; SHIRAIISHI, T; TAKAHASHI, H  
PA (KANF) KANEGAFUCHI KAGAKU KOGYO KK  
CYC 11  
PI EP 317998 A 19890531 (198922)\* EN 16p  
R: BE CH DE FR GB IT LI NL  
JP 02128699 A 19900517 (199026)  
US ~~4981796~~ A 19910101 (199104) 6p  
EP 317998 B1 19940831 (199433) EN 18p  
R: BE CH DE FR GB IT LI NL  
DE 3851306 G 19941006 (199439)  
CA 1336415 C 19950725 (199537)  
JP 2784578 B2 19980806 (199836) 11p  
ADT EP 317998 A EP 1988-119583 19881124; JP 02128699 A JP 1988-289721 19881116; US 4981796 A US 1988-275200 19881123; EP 317998 B1 EP 1988-119583 19881124; DE 3851306 G DE 1988-3851306 19881124, EP 1988-119583 19881124; CA 1336415 C CA 1988-584066 19881124; JP 2784578 B2 JP 1988-289721 19881116  
FDT DE 3851306 G Based on EP 317998; JP 2784578 B2 Previous Publ. JP 02128699  
PRAI JP 1987-296494 19871125; JP 1988-165484 19880701; JP 1988-167197 19880705  
AB EP 317998 A UPAB: 19930923  
Prodn. of optically active (S)-1,2-diols (II) comprises subjecting

(R)-1,2-diols (I) is mixts of (I) and (II) to the action of a microorganism capable of selectively metabolising (I) and/or converting (I) into (II); and recovering the accumulated (II): where R=opt. substd. alkyl, alkenyl, aryl or aralkyl.

The substrates are (R, S)-1,2-butanediol, (r, S)-1,2-pentanediol, (R, S)-1,2-hexanediol, (R, S)-1,2-heptanediol, (R, S)-1-phenyl-1,2-ethanediol, (R, S)-3-phenyl-1,2-propanediol and (R, S)-4-phenyl-1,2-butanediol, forming corresp. (S)-1,2-diols as prods.

USE/ADVANTAGE - (II) are useful in synthesis of physiologically active cpds. useful in pharmaceuticals and agricultural chemicals. The process is commercially advantageous.  
0/0

=>

=> d bib ab 1-4

L47 ANSWER 1 OF 4 USPATFULL

AN 2002:243128 USPATFULL

TI Process for preparation of (R)-1,-2-propanediol by microbes

IN Suzuki, Toshio, Osaka-shi, JAPAN

Idogaki, Hideaki, Osaka-shi, JAPAN

Nakagawa, Atsushi, Osaka-shi, JAPAN

Ueda, Miki, Asaka-shi, JAPAN

PI US 2002132314 A1 20020919

AI US 2001-22619 A1 20011220 (10)

PRAI JP 2000-394493 20001226

DT Utility

FS APPLICATION

LREP WENDEROTH, LIND & PONACK, L.L.P., 2033 K STREET N. W., SUITE 800,  
WASHINGTON, DC, 20006-1021

CLMN Number of Claims: 5

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 497

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for preparation of (R)-1,2-propanediol which comprises  
cultivating a microorganism belonging to genus **Pseudomonas** or  
genus **Alcaligenes** which has ability to assimilate  
(S)-1,2-propanediol as a single carbon source, in a culture medium  
containing racemic 1,2-propanediol as a single carbon source and then  
isolating the remaining (R)-1,2-propanediol from the culture broth.

L47 ANSWER 2 OF 4 USPATFULL

AN 2002:32213 USPATFULL

TI Process for preparation of optically active 1,2-diols by cultivating  
microorganisms

IN Suzuki, Toshio, Osaka-shi, JAPAN

Idogaki, Hideaki, Osaka-shi, JAPAN

Nakagawa, Atsushi, Osaka-shi, JAPAN

PI US 2002019034 A1 20020214

AI US 2001-892743 A1 20010628 (9)

PRAI JP 2000-194316 20000628

DT Utility

FS APPLICATION

LREP WENDEROTH, LIND & PONACK, L.L.P., 2033 K STREET N. W., SUITE 800,  
WASHINGTON, DC, 20006-1021

CLMN Number of Claims: 10

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 363

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A process for preparation of an optically active 1,2-diol compound of  
the following formula: ##STR1##

wherein R is alkyl group, hydroxy substituted alkyl group, or alkenyl  
group, which comprises reacting a corresponding racemic 1,2-diol  
compound with a strain belonging to the genus **Alcaligenes**  
which is cultivating under the aeration.

L47 ANSWER 3 OF 4 USPATFULL

AN 1998:79013 USPATFULL

TI Optical resolution of chlorohydrin with microorganism

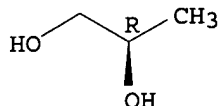
IN Kasai, Naoya, Osaka-fu, Japan

Suzuki, Toshio, Osaka-fu, Japan  
 Idogaki, Hideaki, Hyogo-ken, Japan  
 PA Daiso Co., Ltd., Osaka, Japan (non-U.S. corporation)  
 PI US 5776766 19980707  
 AI US 1996-651935 19960521 (8)  
 PRAI JP 1995-130182 19950529  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Beisner, William H.  
 LREP Jacobson, Price, Holman & Stern, PLLC  
 CLMN Number of Claims: 16  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 1226  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB A novel method for preparing optically active chlorohydrin compound and optically active 1,2-diol compound and/or optically active 3-hydroxy- $\gamma$ -butyrolactone which are useful as intermediates for preparing medicaments, agricultural chemicals, physiologically active substances and ferroelectric liquid crystals, which comprises treating  
 a racemic chlorohydrin compound having the formula: ##STR1## wherein R.sup.1 is H or lower alkyl group; and R.sup.2 is substituted or unsubstituted lower alkyl group when R.sup.1 is H; or R.sup.2 is H when R.sup.1 is lower alkyl group with a microorganism, whereby selectively degrading only one of optical isomers thereof, and recovering the remaining an other optically active chlorohydrin and isolating optically active 1,2-diol compound and/or optically active 3-hydroxy- $\gamma$ -butyrolactone converted by the reaction.  
 L47 ANSWER 4 OF 4 USPATFULL  
 AN 84:43961 USPATFULL  
 TI Carrying out electromicrobial reductions  
 IN Simon, Helmut, Freising, Germany, Federal Republic of  
 Bader, Johann, Neufahrn, Germany, Federal Republic of  
 Guenther, Helmut, Haag, Germany, Federal Republic of  
 PA BASF Aktiengesellschaft, Germany, Federal Republic of (non-U.S. corporation)  
 PI US 4464235 19840807  
 AI US 1983-513838 19830714 (6)  
 PRAI DE 1982-3226888 19820717  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Niebling, John F.  
 LREP Keil & Weinkauff  
 CLMN Number of Claims: 1  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 351  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB An electromicrobial reduction with the aid of aerobic microorganisms in the absence of oxygen is described.

=>

L12 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS  
 RN 4254-14-2 REGISTRY  
 CN 1,2-Propanediol, (R)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1,2-Propanediol, (R)-(-)- (8CI)  
 OTHER NAMES:  
 CN (-)-1,2-Propanediol  
 CN (-)-Propylene glycol  
 CN **(R)-1,2-Propanediol**  
 CN (R)-2-Hydroxy-1-propanol  
 CN 1-Deoxy-sn-glycerol  
 CN D-(-)-Propanediol  
 CN R-(-)-1,2-Propanediol  
 CN R-(-)-Propylene glycol  
 FS STEREOSEARCH  
 MF C3 H8 O2  
 CI COM  
 LC STN Files: BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CBNB,  
 CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSChem, DETHERM\*, GMELIN\*,  
 MEDLINE, PROMT, TOXCENTER, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (-).



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

176 REFERENCES IN FILE CA (1962 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 178 REFERENCES IN FILE CAPLUS (1962 TO DATE)

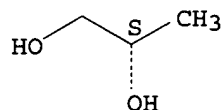
~~42~~

42, 27, 2



L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS  
 RN 4254-15-3 REGISTRY  
 CN 1,2-Propanediol, (S)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1,2-Propanediol, (S)-(+)- (8CI)  
 OTHER NAMES:  
 CN (+)-(S)-1,2-Propanediol  
 CN (+)-1,2-Propanediol  
 CN (S)-(+)-Propylene glycol  
 CN (S)-1,2-Propanediol  
 CN (S)-2-Hydroxy-1-propanol  
 CN 1,2-(S)-Propanediol  
 CN 3-Deoxy-sn-glycerol  
 CN d-Propylene glycol  
 CN L-(+)-Propanediol  
 CN L-(+)-Propylene glycol  
 CN **L-1,2-Propanediol**  
 CN S-(+)-Propane-1,2-diol  
 FS STEREOSEARCH  
 MF C3 H8 O2  
 CI COM  
 LC STN Files: AGRICOLA, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAPLUS,  
 CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHM, DETHERM\*,  
 GMELIN\*, PROMT, SPECINFO, SYNTHLINE, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (+).



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

246 REFERENCES IN FILE CA (1962 TO DATE)  
 4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 247 REFERENCES IN FILE CAPLUS (1962 TO DATE)

> d

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 57-55-6 REGISTRY

CN 1,2-Propanediol (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN (.+-.)-1,2-Propanediol

CN (.+-.)-Propylene glycol

CN (RS)-1,2-Propanediol

CN .alpha.-Propylene glycol

CN 1,2-(RS)-Propanediol

CN 1,2-Dihydroxypropane

CN 1,2-Propylene glycol

CN 1000PG

CN 2,3-Propanediol

CN 2-Hydroxypropanol

CN DL-1,2-Propanediol

CN dl-Propylene glycol

CN Dowfrost

CN Isopropylene glycol

CN Methylethyl glycol

CN Methylethylene glycol

CN Monopropylene glycol

CN PG 12

CN Propylene glycol

CN Sirlene

CN Solar Winter Ban

CN Solargard P

CN Ucar 35

FS 3D CONCORD

DR 63625-56-9, 4254-16-4, 190913-75-8

MF C3 H8 O2

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*,

BIOBUSINESS,

BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB,  
CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB,  
DDFU, DETHERM\*, DIOGENES, DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2,  
ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB,  
IPA, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM\*, PHAR,

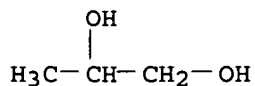
PIRA,

PROMT, RTECS\*, SPECINFO, SYNTHLINE, TOXCENTER, TULSA, ULIDAT, USAN,  
USPAT2, USPATFULL, VETU, VTB

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

18615 REFERENCES IN FILE CA (1962 TO DATE)

2379 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

18657 REFERENCES IN FILE CAPLUS (1962 TO DATE)

19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)